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DETAILED DESCRIPTION

[Detailed explanation of the device]

[0001]

[Industrial Application]

This device relates to the step illumination device fixed, or detached and attached on wall surfaces, such as the interior of a room or a passage, emits light automatically, without depending on electrical energy at the time of urgent interruption to service, and functions as emergency lighting equipment or a sign for refuge.

[0002]

[Description of the Prior Art]

It is the thing is provided with the dry cell for charge always connected to commercial power, and an interruption-to-service detection switching circuit, and it was made only for the time of interruption to service to make turn on a lamp, and the emergency lighting instrument conventionally provided as home use needs to fill up a dry cell periodically, and is inconvenient and uneconomical.

[0003]

[Problem(s) to be Solved]

Many of lamp covers of a step illumination device constitute this with a phosphorescent material content synthetic resin cast, and they enable it to use the case as an illumination light source at the time of interruption to service paying attention to translucent or being considered as opalescence.

[0004]

[Means for Solution]

Commercial phosphorescent material is light yellow in light in the daytime, and a cast which carried out 5-30 weight-section combination of this at lucites, such as an acrylic, becomes opalescence. In combination of 30 or more weight sections, a crack etc. go into a cast easily,

and afterglow brightness is low in five or less weight sections.

Phosphorescent material to which suitable phosphorescent material for the case uses SrAl_2O_3 as a host crystal (trade name "N noctilucence")

It is, and this thing is ground after 3-hour or more calcination at temperature of 1300 ** in an electric furnace of a reducing atmosphere, is provided with sufficient heat resistance, and it is excited by light with a wavelength of 250-400 nm, and an afterglow emits light to high-intensity with light yellowish green light with a center wavelength of 520 nm, and holds long damping time.

since afterglow time until luminosity falls 20% is about 10 minutes, this luminous object is enough for refuge etc. -- time luminescence is carried out.

It mixes in soft synthetic resin, and using tape shape, or making it distribute in a binder and considering it as a coat can also be mixed in an acrylic resin etc., and the phosphorescent material paints can also use it as a molding body.

The case uses all or some of coverings of a lamp with which a front plate of a step illumination lamp laid under the wall surface near the floor or a socket with the plug for electric socket insertion was equipped as an opalescence synthetic resin cast which carried out [above-mentioned] phosphorescent material 10-30 weight-section combination to 90 to lucite 70 weight section.

the case -- especially in the case of a night-light [ON-OFF / a lamp / with a night-light / an automatic blink circuit] etc., elegance has an effect.

[0005]

[Example]

As for a wall surface and 3, in drawing 1, 1 is [a socket and 5] the electric bulbs of 5W-10W the embedding box of a step illumination device, and 4 a passage and 2. 6 is circular or the casting cast (3 mm in thickness) used as a lamp cover which is a rectangular (about 10 cm x 8 cm) front plate, and blended transparent-acrylic-resin 70 weight section and phosphorescent material (N noctilucence) 30 weight section.

This front plate is opalescence opacity and cannot recognize a lamp, a socket, etc. visually from the outside in the time of lighting not to mention the time of putting out lights. Saturation time of phosphorescent material (usually 10 to 20 minutes)

If the light is put out behind, in a dark place, light will be emitted in the fluorescence afterglow more than for about 10 minutes with illumination sufficient as lighting for ****. When you need illumination, it is good to form a front plate and the luminous plate 6B of the same kind in the back light reflector part of a box.

By a diagram, the electric bulb is omitted, although usually connected to an automatic-with external illuminance sensor blink circuit.

10 is provided with the automatic-with sensor blink circuit or manual switch which is a plug and

is not illustrated in drawing 2. It is the cylindrical cover in which 11 surrounds a socket, 12 surrounds an about [10W] small lamp, and 13 surrounds the lamp, and is the same phosphorescent material combination synthetic resin cast as the above.

When the shape of a cylindrical cover is various and all cannot be used as a photogen, an auxiliary photogen like drawing 3 which becomes with the lamp cover 13 and same material is used. In drawing 3, a socket insertion hole and 17 are fillets with radiate tubed auxiliary photogen and 16, and 15 serves as the piece of rocking prevention. this tubed photogen may be applied also to the lamp socket 4 of drawing 1 -- it is natural.

[0006]

[Effect]

Since the case serves as a peek inside prevention cover when having always switched on the light in a dark place at night, and it becomes a light-emitting surface at the time of extraordinary interruption to service, it emits light and the luminescence place of it is the same as that of the time of lamp lighting as mentioned above, it is effective in not giving anxiety. The position is a position which usually illuminates a step in a passage or the interior of a room, since it maintains sufficient step illumination by fluorescence for a long time even if the circumference becomes an instant in darkness, in refuge and others, does not have fear of confusion, and can take safe action.

Even if emergency illumination is covered with water by a sprinkler etc. since it is not based on electrical energy for example, it does not have a fear of short-circuiting or igniting, and is completely safe.

[Translation done.]